
A New Species of *Ocotea* (Lauraceae) from the Serra do Espinhaço, Brazil

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ABSTRACT. *Ocotea oppositifolia*, from the Serra do Espinhaço, Bahia-Minas Gerais, Brazil, is described as new. It can be distinguished from the other neotropical species in the genus by the combination of its opposite leaves, pit domatia, and double-rimmed cupules.

Ocotea, with more than 300 species, is one of the larger genera of Lauraceae and is known from the Neotropics, Madagascar, and tropical Africa. It is the largest genus of Lauraceae in the Neotropics, distributed from Mexico to Argentina. According to van der Werff (1991), the genus is extremely variable and sometimes thought to be a catchall for lesser known neotropical laurels. The species of this genus are characterized by the paniculate or racemose inflorescences, six equal tepals, nine stamens, anthers with four pollen sacs arranged in two rows, two small, globose glands at the base of each innermost stamen, and fruits with flat or cup-shaped cupules. Nearly all the neotropical species of this genus have alternate or clustered leaves. However, some collections from Brazil were recently discovered to have opposite leaves. Some of these are treated as *Ocotea* sp. in van der Werff (1995). Besides the opposite leaves, the specimens have pit domatia and double-rimmed cupules, and the combination of those characters distinguishes them from all the other neotropical *Ocotea* species.

Ocotea oppositifolia S. Yasuda, sp. nov. TYPE: Brazil. Bahia: Seabra, in a forest disturbed in some areas, with woody lianas, 900 m alt., 13 Feb. 1987 (fl), J. R. Pirani et al. 2000 (holotype, MO). Figure 1.

Species haec ab aliis speciebus neotropicis differt foliis oppositis et domatiis foveatis et cupulis diplomarginatis.

Small tree or shrub, 2–6(–12) m tall. Twigs terete, with a few appressed hairs, soon glabrescent. Terminal bud with appressed hairs. Leaves opposite, elliptic, 6–13 × 2–5 cm, the base and apex acute, firmly chartaceous, glabrous, glossy above,

pinnately veined; lateral veins 8–12 pairs, the midrib, lateral veins, and reticulation immersed on both surfaces, or slightly raised below; pit domatia sometimes present in the axils of the secondary veins near the base, with straight hairs along the edges. Petioles 0.5–1 cm long, flat above. Inflorescences in the axils of the leaves or rarely around bracts, racemose, rarely paniculate, 3–6 cm long, with some appressed hairs. Pedicels pubescent, to 5 mm long, with an ovate-elliptic bract ca. 2.5 mm long at the base. Flowers bisexual, creamy or green, aromatic, 3–4 mm long including the slightly narrowed base. Tepals 6, equal, ovate, 2.0–3.0 × 1.5–2.2 mm, the outer surface with some appressed hairs or nearly glabrous, the inner surface with erect hairs, the inner surface of the inner tepals more densely so. Stamens 9, all 4-celled and the cells arranged in two rows, the anther 0.7–0.9 mm long, papillose on the apex, the filament 0.3–0.4 mm long, pubescent; outer 6 stamens with introrse cells, inner 3 stamens with extrorse cells, each of the inner stamens with 2 glands attached near the base. Staminodia 3, ca. 0.7 mm long, sagittate or stipitiform, pubescent. Ovary globose, ca. 0.7 mm diam., glabrous; style ca. 1.2 mm long, glabrous. Infructescences with few fruits, glabrous, rarely sparsely pubescent, 4–6 cm long. Fruits ellipsoid to ovoid, 2–2.5 cm long, ca. 1.4 cm wide (when dried), glabrous. Cupules olive-green, cup-shaped, ca. 2 cm wide, ca. 1.5 cm deep, glabrous, the outside smooth or slightly ridged, double-rimmed, the outer rim erect, slightly longer than the inner rim.

Ocotea oppositifolia is known from the Serra do Espinhaço, at about 1000 m in elevation. According to Harley (1995), the vegetation of this region is categorized as cerrado or campo rupestre: cerrado is a seasonal savanna woodland formation with medium to low trees and shrubs, characteristic of a huge area of southeast, central, and parts of western Brazil; campo rupestre is a unique vegetation of the upper levels of the Serra do Espinhaço, where outcrops of usually highly acidic rocks in-

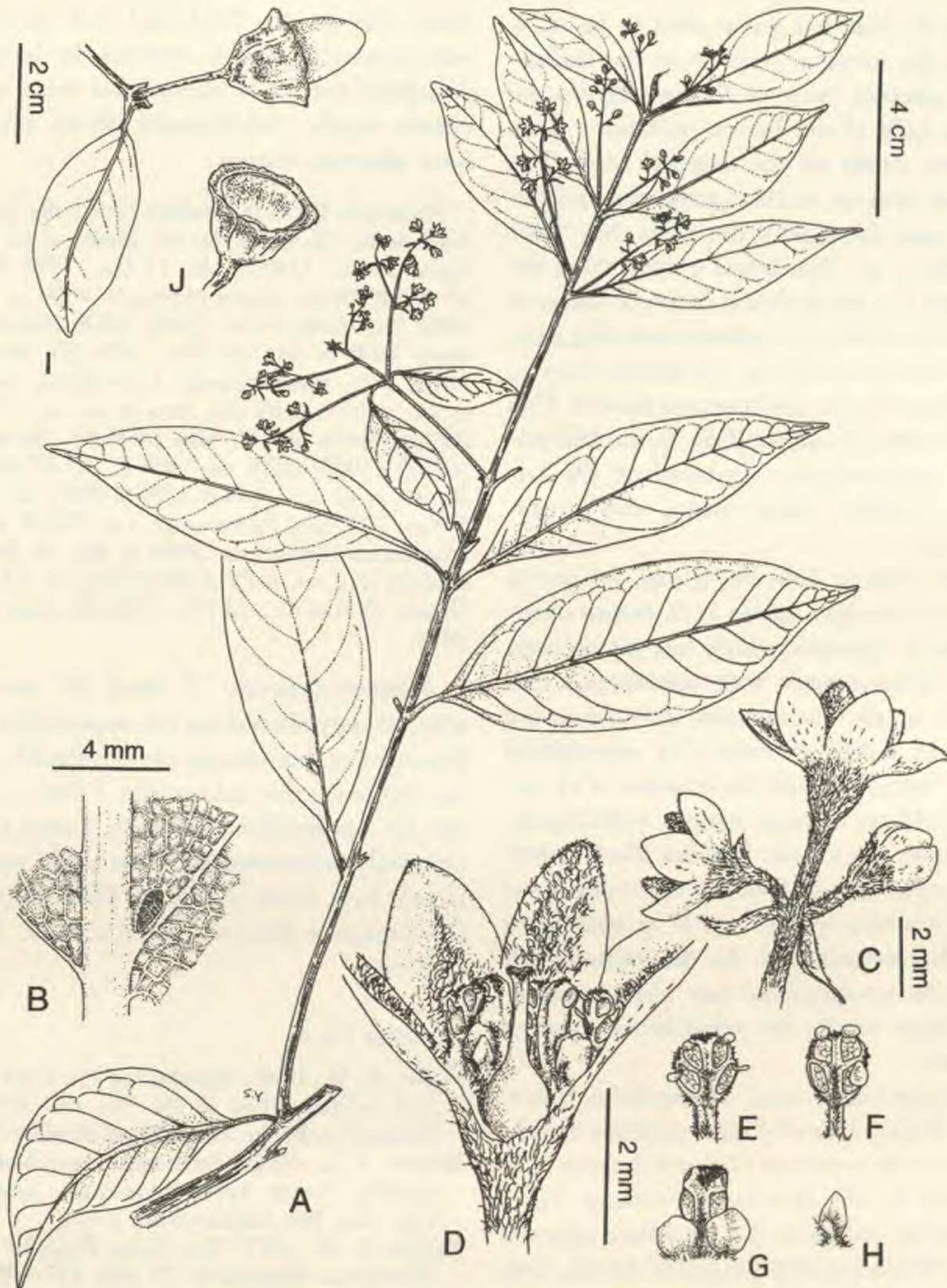


Figure 1. *Ocotea oppositifolia* S. Yasuda. —A. Branchlet with inflorescences. —B. Detail of lower surface of leaf. —C. Detail of inflorescence terminal divisions. —D. Open flower. —E. Adaxial view of a first whorl stamen. —F. Adaxial view of a second whorl stamen. —G. Abaxial view of a third whorl stamen. —H. Abaxial view of a staminode. —I. Branchlet with fruit. —J. Cupule.

hibit forest formation, and the mountain ridges with their saxicolous flora are intersected by humid valleys, providing a complex mosaic of vegetation types with a variety of microclimates.

Ocotea oppositifolia is closely related to the *O. indecora* group of Rohwer (1986), which also grow as shrubs or trees, have racemose inflorescences, bisexual flowers, and cup-shaped cupules. In addition, some species of the *O. indecora* group tend to have subopposite leaves. The *O. indecora* group is still poorly known, the delimitation of species presenting some difficulties (Rohwer, 1986), but

one can distinguish *O. oppositifolia* from almost all the other species in this group by its habitat (most of the other species are from wet forests), pit domatia (the domatia of the other species, if present, do not modify the tissue of the leaves), and double-rimmed cupules (most of the other species have single-rimmed cupules). An exception, *O. complicata* (Meissner) Mez, occurs in caatingas and has double-rimmed cupules according to Rohwer (1986); this species differs from *O. oppositifolia* by its alternate leaves and the absence of domatia. Besides the aforementioned characters, the inflores-

cences of the *O. indecora* group tend to be clustered only on the terminal buds or on the leafless short shoots, whereas those of *O. oppositifolia* are mostly in the axils of the leaves (without a short shoot) and very rarely on the terminal buds. The leaves of some species in this group also tend to be clustered near the tops of the twigs, but those of *O. oppositifolia* are distributed evenly along the twigs. Although it is not included in the *O. indecora* group by Rohwer (1986), *O. catharinensis* Mez likely belongs in this group, having subopposite leaves, racemose inflorescences, and bisexual flowers. This species differs from *O. oppositifolia* by its non-pitted domatia, inflorescences clustered on the terminal buds or leafless short shoots, and single-rimmed cupules.

Besides the *Ocotea indecora* group, a species possibly close to *O. oppositifolia* is *O. porosa* (Nees & C. Martius) L. Barroso, which has pit domatia and axillary inflorescences with pubescence less dense near the tepals. The domatia of *O. porosa* are pitted like a slit, unlike the ones of *O. oppositifolia* with a small, round pit, and the cupules of *O. porosa* are flat and have a single margin. Additionally, *O. porosa* is from wet forests. Van der Werff (1995) suggested a relationship between the collections belonging to this new species and *O. scrobiculifera* Vattimo-Gil, but according to the description (Vattimo, 1977), *O. scrobiculifera* has ferruginous-tomentellous twigs, unlike the subglabrous twigs of *O. oppositifolia*.

In the neotropical *Ocotea*, *O. beyrichii* (Nees) Mez and *O. eichleri* Mez also have opposite or subopposite leaves, but one can distinguish them from *O. oppositifolia* by the absence of domatia. There are some species in *Licaria* that also have opposite leaves and/or double-rimmed cupules, but the collections of this genus only with fruits can be distinguished from *O. oppositifolia* by the absence of domatia. Regarding the double-rimmed cupules, there are about seven species with the same character in Brazil. However, the outer rims of most of

those species are thickened and spread outward with persistent tepals, whereas the ones of *O. oppositifolia* are not thickened but erect without persistent tepals. Additionally, those seven species have alternate leaves.

Paratypes. BRAZIL. **Bahia:** Serras dos Lençois, 700–1000 m alt., 26 May 1980 (fr), Harley et al. 22633 (MO); Água Quente, 1140 m alt., 17 Dec. 1988 (fr), Harley et al. 27546 (MO); Abaíra (Abeira?), 1050 m alt., 27 Dec. 1988 (fr), Harley et al. 27828 (MO); Município de Mucugê, 1000 m alt., 22 Dec. 1979 (fl), Mori & Benton 13145 (NY). **Minas Gerais:** Grão-Mogol, ca. 1000–1050 m alt., 4 Nov. 1987 (fr), Assis et al. s.n. (CFCR 11504) (MO), 1050 m alt., 27 May 1988 (fr), Barreto et al. s.n. (CFCR 11990) (MO), ca. 1000 m alt., 28 May 1988 (fr), Barreto et al. s.n. (CFCR 12064) (MO), ca. 1000 m alt., 5 Nov. 1987 (fr), Pirani et al. s.n. (CFCR 11539) (MO); Diamantina-Biribiri, ca. 1000 m alt., 31 Jan. 1981 (fr), Giulietti et al. s.n. (SPF 21969) (MO); ca. 5 km N of Grão-Mogol, 1000 m alt., 18 Feb. 1969 (fr), Irwin et al. 23482 (MO).

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